



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2023-2152; Project Identifier MCAI-2023-00798-T; Amendment 39-22607; AD 2023-23-05]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Bombardier, Inc., Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Bombardier, Inc., Model BD-100-1A10 airplanes. This AD was prompted by a design review of the avionic architecture of the pitch trim indication and alerting system that revealed software errors could generate misleading pitch trim indication to the crew, leading to incorrect horizontal stabilizer positioning at takeoff. This AD requires revising the Emergency Procedures and Normal Procedures of the existing airplane flight manual (AFM) to ensure the horizontal stabilizer is correctly configured prior to takeoff. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-2152; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

*Material Incorporated by Reference:*

- For service information identified in this final rule, contact Bombardier Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-2999; email [ac.yul@aero.bombardier.com](mailto:ac.yul@aero.bombardier.com); website [bombardier.com](https://www.bombardier.com).

- You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-2152.

**FOR FURTHER INFORMATION CONTACT:** Gabriel Kim, Aviation Safety

Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email 9-avs-nyaco-cos@faa.gov.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2023-2152; Project Identifier MCAI-2023-00798-T” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

**Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public

docket of this AD. Submissions containing CBI should be sent to Gabriel Kim, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email 9-avs-nyaco-cos@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

Transport Canada, which is the aviation authority for Canada, has issued Transport Canada AD CF-2023-48, dated June 30, 2023 (Transport Canada AD CF-2023-48), to correct an unsafe condition on certain Bombardier, Inc., Model BD-100-1A10 airplanes. Transport Canada AD CF-2023-48 states that a Bombardier design review of the avionic architecture of the pitch trim indication and alerting system has revealed that software errors in the input/output concentrator, data concentrator unit, and/or adaptive flight display could generate misleading pitch trim indication to the crew, leading to incorrect horizontal stabilizer positioning at takeoff. Incorrect horizontal stabilizer positioning at takeoff could result in an extreme pitch oscillation and subsequent loss of control of the airplane and serious injury to passengers.

After Transport Canada AD CF-2023-48 was issued, Transport Canada notified the FAA that the required actions in Transport Canada AD CF-2023-48 did not adequately address the unsafe condition, and that they planned to revise their AD accordingly. Subsequently, Transport Canada issued Transport Canada AD CF-2023-48R1, dated September 29, 2023 (Transport Canada AD CF-2023-48R1) (referred to after this as the MCAI) as an interim solution while it further investigates the unsafe condition. The MCAI requires mandating new AFM procedures to ensure the flightcrew checks that the horizontal stabilizer is correctly configured to prevent misleading pitch trim indications, which could result in extreme pitch oscillation.

The FAA is issuing this AD to address the unsafe condition on these products. You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-2152.

#### **Related Service Information under 1 CFR Part 51**

The FAA reviewed the following Bombardier temporary revisions:

- Bombardier Challenger 300 Temporary Revision TR-94-1, to Airplane Flight Manual (AFM) CSP 100-1, dated February 6, 2023;
- Bombardier Challenger 300 Temporary Revision TR-94-1, to AFM CSP 100-1 (Metric), dated February 6, 2023; and
- Bombardier Challenger 350 Temporary Revision TR-25-1, to AFM CH 350, dated February 6, 2023.

This service information describes procedures for revising the Emergency Procedures and Normal Procedures of the existing AFM to ensure the horizontal stabilizer is correctly configured prior to takeoff. These documents are distinct since they apply to different airplane configurations.

The FAA also reviewed the following checklists:

- “Takeoff Configuration Warnings,” of Chapter 3, “Emergency Procedures,” of the Bombardier Challenger 350 AFM, Publication No. CH 350 AFM, Revision 38, dated May 11, 2023; and
- “Before Starting Engines,” of Chapter 4, “Normal Procedures,” of the Bombardier Challenger 350 AFM, Publication No. CH 350 AFM, Revision 38, dated May 11, 2023.

These checklists include the same information specified in Bombardier Challenger 350 Temporary Revision TR-25-1, to AFM CH 350, dated February 6, 2023, but with minor changes to text. (For obtaining the checklists for Bombardier Challenger

350 AFM, Publication No. CH 350 AFM, use Document Identification No. CH 350 AFM.)

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

#### **FAA's Determination**

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI and service information referenced above. The FAA is issuing this AD after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

#### **AD Requirements**

This AD requires revising the Emergency Procedures and Normal Procedures of the existing AFM to ensure the horizontal stabilizer is correctly configured prior to takeoff.

#### **Compliance with AFM Revisions**

Transport Canada AD CF-2023-48R1 requires operators to "advise all flight crews" of revisions to the AFM, and thereafter to "operate the aeroplane accordingly." However, this AD does not specifically require those actions as those actions are already required by FAA regulations. FAA regulations require that operators furnish to pilots any changes to the AFM (for example, 14 CFR 121.137), and to ensure the pilots are familiar with the AFM (for example, 14 CFR 91.505). As with any other flightcrew training requirement, training on the updated AFM content is tracked by the operators and recorded in each pilot's training record, which is available for the FAA to review. FAA regulations also require pilots to follow the procedures in the existing AFM including all

updates. 14 CFR 91.9 requires that any person operating a civil aircraft must comply with the operating limitations specified in the AFM. Therefore, including a requirement in this AD to operate the airplane according to the revised AFM would be redundant and unnecessary. Further, compliance with such a requirement in an AD would be impracticable to demonstrate or track on an ongoing basis; therefore, a requirement to operate the airplane in such a manner would be unenforceable.

### **Interim Action**

The FAA considers this AD to be an interim action. Transport Canada and Bombardier are still investigating the unsafe condition to determine if additional actions are necessary. If additional actions are determined to be necessary, the FAA may issue additional rulemaking.

### **Justification for Immediate Adoption and Determination of the Effective Date**

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies forgoing notice and comment prior to adoption of this rule because software errors in the avionic architecture of the pitch trim indication could generate misleading pitch trim indication to the crew, leading to incorrect horizontal stabilizer positioning at takeoff, which could result in an extreme pitch oscillation and subsequent loss of control of the airplane and serious injury to

passengers. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

### **Regulatory Flexibility Act**

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

### **Costs of Compliance**

The FAA estimates that this AD affects 740 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

#### **Estimated costs for required actions**

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
1 work-hour X \$85 per hour = \$85	\$85	\$85	\$62,900

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds



necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2023-23-05 Bombardier, Inc.:** Amendment 39-22607; Docket No. FAA-2023-2152; Project Identifier MCAI-2023-00798-T.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Bombardier, Inc., Model BD-100-1A10 airplanes, certificated in any category, serial numbers 20003 through 20936 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Code 31, Indicating/Recording System; 27, Flight Controls.

**(e) Reason**

This AD was prompted by a design review of the avionic architecture of the pitch trim indication and alerting system that revealed software errors could generate misleading pitch trim indication to the crew, leading to incorrect horizontal stabilizer positioning at takeoff. The FAA is issuing this AD to ensure the horizontal stabilizer is correctly configured prior to takeoff. The unsafe condition, if not addressed, could result in an extreme pitch oscillation and subsequent loss of control of the airplane and serious injury to passengers.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Revision of Existing Airplane Flight Manual (AFM)**

Within 60 days after the effective date of this AD, revise the Emergency Procedures in Section 03-35, and the Normal Procedures in Section 04-02, of the existing AFM to include the information specified in the service information identified in paragraph (g)(1) or (2), as applicable.

(1) Bombardier Challenger 300 Temporary Revision TR-94-1, to Airplane Flight Manual (AFM) CSP 100-1, dated February 6, 2023; or Bombardier Challenger 300 Temporary Revision TR-94-1, to AFM CSP 100-1 (Metric), dated February 6, 2023.

(2) Bombardier Challenger 350 Temporary Revision TR-25-1, to AFM CH 350, dated February 6, 2023; or page 03-35-1, in checklist “Takeoff Configuration Warnings,” of Chapter 3, “Emergency Procedures,” and page 04-02-10, in checklist “Before Starting Engines,” of Chapter 4, “Normal Procedures,” of the Bombardier Challenger 350 AFM, Publication No. CH 350 AFM, Revision 38, dated May 11, 2023.

Note 1 to paragraph (g)(2): For obtaining the checklists for Bombardier Challenger 350 AFM, Publication No. CH 350 AFM, use Document Identification No. CH 350 AFM.

**(h) Additional AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the International Validation Branch, mail it to the address identified in paragraph (i)(2) of this AD. Information may be emailed to: 9-AVS-NYACO-COS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, International Validation Branch, FAA; or Transport Canada; or Bombardier’s Transport Canada Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(i) Additional Information**

(1) Refer to Transport Canada AD CF-2023-48R1, dated September 29, 2023, for related information. This Transport Canada AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-2152.

(2) For more information about this AD, contact Gabriel Kim, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email [9-avs-nyaco-cos@faa.gov](mailto:9-avs-nyaco-cos@faa.gov).

**(j) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Bombardier Challenger 300 Temporary Revision TR-94-1, to Airplane Flight Manual (AFM) CSP 100-1, dated February 6, 2023.

(ii) Bombardier Challenger 300 Temporary Revision TR-94-1, to AFM CSP 100-1 (Metric), dated February 6, 2023.

(iii) Bombardier Challenger 350 Temporary Revision TR-25-1, to AFM CH 350, dated February 6, 2023.

(iv) “Takeoff Configuration Warnings,” of Chapter 3, “Emergency Procedures,” of the Bombardier Challenger 350 Airplane Flight Manual (AFM), Publication No. CH 350 AFM, Revision 38, dated May 11, 2023.

Note 2 to paragraph (j)(2)(iv): For obtaining the checklists specified in paragraphs (j)(2)(iv) and (v) of this AD for the Bombardier Challenger 350 AFM, Publication No. CH 350 AFM, use Document Identification No. CH 350 AFM.

(v) “Before Starting Engines,” of Chapter 4, “Normal Procedures,” of the Bombardier Challenger 350 AFM, Publication No. CH 350, Revision 38, dated May 11, 2023.

(3) For service information identified in this AD, contact Bombardier Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-2999; email [ac.yul@aero.bombardier.com](mailto:ac.yul@aero.bombardier.com); website [bombardier.com](http://bombardier.com).

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit [www.archives.gov/federal-register/cfr/ibr-locations](http://www.archives.gov/federal-register/cfr/ibr-locations) or email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov).

Issued on November 16, 2023.

Ross Landes, Deputy Director for Regulatory Operations,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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